1 - Suggestions on Ch. Reform by the Clergy of the archdeaconry of Worcester. March 1857.
2 - Westminster Catechism
3 - Church Penitentiaries
4. 4 great sermons of great preachers.
5 - Spurgeon sermons
6. Miller John. visitation sermon
7 N. S. Sermon.

8. Woodhouse Reformatory
9 Endowments & Examinations Humphries
10 Civil service Competition
11. Church Rates. T. Galton
12 Industrial Question in N. School
13 Old Law on Poppery.
14 Meeting of Bengal army. 1857
15. Cholera & Quarantine
16. Cleansing of Droitwich.

Wm Lea

J. Allen

1946

PUBLIC HEALTH ACT

(11 & 12 Vict. Cap. 63.)

REPORT

TO THE

GENERAL BOARD OF HEALTH

ON A

PRELIMINARY INQUIRY

INTO THE SEWERAGE, DRAINAGE, AND SUPPLY OF WATER, AND THE SANITARY CONDITION OF THE INHABITANTS

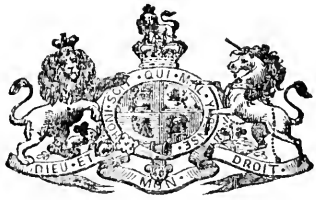
OF THE BOROUGH OF

DROITWICH,

IN THE COUNTY OF WORCESTER.

By ALFRED L. DICKENS, Esq., C.E.,

SUPERINTENDING INSPECTOR.



LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.

FOR HER MAJESTY'S STATIONERY OFFICE

1857.

[67.]

NOTIFICATION.

THE General Board of Health hereby give notice, in terms of section 9 of the Public Health Act, that on or before the 11th day of May next, being a period of not less than one month from the date of the publication and deposit hereof, written statements may be forwarded to the Board with respect to any matter contained in or omitted from the accompanying Report on a Preliminary Inquiry into the Sewerage, Drainage, Supply of Water, and the Sanitary Condition of the Inhabitants of the Borough of DROITWICH, in the County of Worcester; or with respect to any amendment to be proposed therein.

By order of the Board,

T. TAYLOR, *Secretary.*

Whitehall, 6th April 1857.

PUBLIC HEALTH ACT.

1848

MAP

OF THE

PARLIAMENTARY BOROUGH

OF

DROITWICH.

THE BLUE TINT SHEWS EXTENT OF MUNICIPAL BORDUGH

PRELIMINARY INQUIRY

ALFRED L DICKENS ESQ^re C E

SCALE

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PUBLIC HEALTH ACT (11 & 12 Vict. c. 63.)

Report to the President of the General Board of Health on a Preliminary Inquiry into the Sewerage, Drainage, and Supply of Water, and the Sanitary Condition of the Inhabitants of the Borough of DROITWICH, *in the County of Worcester. By* ALFRED L. DICKENS, Esq., C.E., *Superintending Inspector.* Droitwich.

SIR, *Whitehall, January* 1857.

ON the 20th of November 1856, a petition was forwarded to the General Board of Health from the borough of Droitwich, in the county of Worcester, praying that a Superintending Inspector might be sent to that borough for the purpose of making a preliminary inquiry into the sanitary condition of the inhabitants, in accordance with the provisions of the Public Health Act, 1848. The petition was signed by 92 ratepayers, the certified total number of ratepayers within the borough being 638.

In accordance with the prayer of this petition, I received instructions to proceed with the inquiry. I fixed the 17th day of December as the day for holding the same, and soon after 11 o'clock in the forenoon I opened the proceedings.

I produced copies of the following newspapers, in all of which notices of my intention of holding the inquiry had been inserted, as is directed by the Act of Parliament :—

Berrow's Worcester Journal, dated November 29th, 1856.

Worcester Herald, of the same date ; and the

Worcester Chronicle, dated November 26th, 1856.

Evidence was also offered that copies of the same notice had been affixed to all the churches, chapels, and other places where notices relating to public matters within the borough of Droitwich are usually posted.

NAMES OF GENTLEMEN PRESENT.

There were present the following ratepayers:—W. Clay, Esq., Mayor of the borough ; S. Tombs, Esq., Town Clerk ;

Droitwich. E. Smith, T. G. Smith, J. Tolley, T. Thould, Esqrs., borough magistrates; J. Curtler, Esq., clerk to the Turnpike Trustees; J. Holyoake, Esq.; Messrs. Gabb; J. Smith, architect and surveyor; Gorle, Greaves, J. Moule, G. Everton, W. Nutt, Chantery, J. Greaves, J. Blick, Hyatt, J. Shilvock, Harrison, Walter Noke, T. Harris, Mellor, Crowther, Davies, Jones, E. Smith, Goole, Bourne, Page, Knight, Emuss, Bowles, Burrowes, &c., &c.

I informed the meeting of the circumstances under which the inquiry was held, and stated that the Mayor, at his request, had been furnished with a copy of the names attached to the petition. I further observed, that as far as I was individually concerned, I appeared there perfectly unbiassed, and that my object was not to make out a case for or against the application of the Public Health Act, but to obtain facts and information for further consideration, in order that I might be enabled to offer such recommendations to the President of the General Board of Health as, in my opinion, were justified by all the circumstances of the case. I explained that the cost of applying the Act in this instance would not, in all probability, exceed the sum of 50*l.* or 60*l.*, and the repayment of that sum could be distributed over a period of years with the sanction of the Lords of the Treasury. I also explained many of the clauses of the Public Health Act. I stated that the General Board would have no control over the Local Board, in the event of one being formed; but the sanction of the General Board was required to plans, the cost of the execution of which was proposed to be extended over a period of years, the money being borrowed on mortgage of the rates, in respect of which such plans were proposed to be executed. I further explained, in the event of the Public Health Act being applied to Droitwich, the General Board of Health would, on all occasions, be anxious to offer the best advice on all matters arising under its operation; a considerable experience of the working of the Act well qualifying them to afford information and assistance to Local Boards of Health.

The *Mayor* of the borough of Droitwich stated,—

"That he believed the general feeling of the corporation, and a considerable number of the ratepayers, was against the application of the Public Health Act. This feeling he attributed to a fear that its operation would be very expensive to the district."

I explained that the amount to be expended would rest entirely with the Local Board of Health. It was for them to decide whether they would expend anything or nothing

Mr. *Gabb,* the principal promoter of the petition, ob- Droitwich
served,—

"That in the case of Droitwich, the words 'Local Board' would mean 'Town Council,' and that body would have the power over the expenditure. The ratepayers would be placing all authority in the hands of the Town Council, and he saw no reason why that body should incur any great cost at the outset."

After a desultory conversation on the subject of expense, and the manner in which it was alleged some names had been obtained to the petition, I proceeded to take evidence, of which the following is an abstract:—

GENERAL EVIDENCE.

Mr. *Gabb* said,—

"The sewerage could not be in a worse state. He has been resident in the town for 30 years, and knows it well. The only outfall for the sewerage, on the southern side of the town, is into one of the canal ponds. It is a pond about three miles in length, and is really stagnant. The only time the water flows is when it is drawn through the locks at the lower end. There is a sewer from the workhouse, which empties into the canal. The smell from this sewer is at times very bad. Some other sewers or drains empty into the brook. There are a few waterclosets attached to the imperfect main drains. There are no stench-traps or other contrivances to prevent the escape of foul air from the gullies attached to these drains. The cholera was very bad here in 1832, but in 1849 and 1854 there were but few cases.* In 1832 there were more cases than in any other town in the district. In the street in which he lives, much annoyance is felt from the stench from the drains. As a rule, the privies to the poorer houses are wretchedly constructed, very deficient in number, very inconveniently placed, and are almost invariably kept in a wretched and filthy condition. This latter remark also applies to the pigsties, of which there are many. The ventilation in the cottages is most deficient. The roads and streets are in a very bad state. Friar Street is especially so. The causeways are very narrow and ill kept. The footpaths indeed, are under no control. They have been very imperfectly constructed, and some of them are impassable at times. The parish roads, although an enormous sum of money is said to be spent on them, are kept in a disgraceful state. There are no less than eight surveyors of highways within the municipal borough. The turnpike road, which forms all the main streets of the town, is kept in repair at about 25*l.* per mile per annum, while the imperfectly kept parish roads cost considerably more, one actually having cost 100*l.* per mile per annum. The main roads in the town are moderately well lighted."

* It will be observed, on reference to the details of the mortality from zymotic disease, page 17, that in 1849 there were 8 deaths registered as occurring from cholera; 3 from diarrhœa; and 1 from dysentery. In 1854, 2 deaths were registered as occurring from cholera, and 3 from diarrhœa.

Droitwich.

The *Mayor* and the *Town Clerk* observed, that the traffic within the town varied very much, and that it was not fair therefore to take one piece of road as an example of cost.

I may here remark that, as far as I could ascertain, the principal traffic occurs on the turnpike roads.

Mr. *Gabb* further stated,—

"The water supply is very deficient. More than half, or, as he believes, two-thirds of the houses are without water."

The *Town Clerk* said,—

"The water supply is deficient on account of the difficulty in obtaining any quantity of fresh water. After a certain distance down, the water becomes very brackish, and eventually it is perfectly salt. The brackish water is found as near the surface as 10 feet."

Mr. *William Harrison* said,—

"The drainage from the workhouse was said by Mr. Gabb to be very bad, but he denies it. Admits that there is an offensive drain close by his house, and adjoining the workhouse drain. There is not a good supply of water at all. Many persons have no supply whatever, and are dependant upon their neighbours for what they use. He has a good supply himself, but not enough for his neighbours."

It is right to state, that on the day of my inspection of the district, Mr. *Wood*, who lives close by the outlet of the workhouse drain referred to above, fully corroborated Mr. Gabb's statement as to the nuisance arising from it.

Mr. *John Smith*, architect and surveyor, said,—

"There is a pool of water dammed up belonging to a Mr. Wedgebury; this was once used as a supply for domestic use, by some of the inhabitants, but now it is merely used by Mr. Clay for his engine purposes. A good outfall may be obtained for an improved system of drainage, by passing under the canal, and proceeding to a point in the river Salwarp below Briar Mill. This would be a distance from the town of about 68 chains, and would give a fall of about 11 feet, or about 1 in 400. In giving this information, he speaks from levels taken by himself. The distance from Briar Mill to the next mill lower down the stream is about one mile."

The *Mayor* said,—

"When the canal was cleaned out some time ago, his firm put in an 18-inch iron pipe at a point low enough to take the drainage from the town, in case such drainage should ever be carried out. The corporation continued a brick barrel drain from the iron pipe he mentions sufficiently far towards the town to keep the drain out of water way. He fully admits the necessity for improved drainage, but does not see his way as to how it is to be paid for."

Mr. *Gabb*, with reference to the state of the burial grounds, observed, that Droitwich.

"There were three within the municipal borough. One was in the town, but this had been closed. The others were situated at Whitton, and at the parish church at St. Peter's, both without the town."

Mr. *Greaves* stated,—

"He has lived in the town for upwards of 60 years, and he contradicts the assertion made by Mr. Gabb, that the canal is stagnant water. He admits that the state of the streets and drainage is very bad, but considers that much has been done to improve them during the last 20 years."

From my own personal observation I can easily imagine that in hot weather the canal, in its present state, must cause a considerable nuisance. No drainage should be allowed to flow into it; and in the event of any improvements in the drainage of Droitwich being carried out, it is desirable that especial attention should be paid to this matter.

Mr. *C. R. Suffield*, surgeon, stated,—

"He is one of the medical officers of the district, and that in his experience, among other causes to account for the high rate of mortality in the district is that of placing large heaps of night-soil immediately in front of the cottage dwellings. This is more especially the case in the district of the 'In-liberties.' Has no doubt much disease is produced from this cause. Throughout the district there is a very small proportion of privies to houses. In many instances, not more than in the proportion of one to eight or nine. Fever and scarlatina are diseases that occasionally prevail, and in the autumn there is a good deal of diarrhœa. He has practised in Droitwich about 12 months, and is decidedly of opinion that the carrying out of proper works of drainage would have the effect of lowering the mortality, as a large proportion of deaths arise from preventible disease. There is a great deficiency in the water supply; this also tends to the production of disease. Patients here are generally slow to recover. There is much over-crowding in the 'In-liberties,' or 'Vines,' as it is sometimes called. The people there are chiefly employed at the salt-works. There is a good deal of intemperance in the district, but does not think that much disease is attributable to that cause. There is a large mortality among children. The class of persons he referred to as being affected by the existing state of things in the 'In-liberties,' were occasionally paupers. Their illness is therefore expensive to the general body of the rate-payers. The cottages are very ill ventilated, but complaints from the occupiers are rare, as they have become habituated to the squalor and wretchedness in which they live."

Mr. *Jaques*, surgeon, said—

"He is of opinion that there are nuisances existing in the town highly prejudicial to health. Drainage might do much towards

Droitwich. removing them, but would not, in his opinion, do so entirely. Refers more especially to the nuisance caused by the ash beds, or refuse from the salt-works. These beds were occasionally on fire, and at that time emitted sulphurous and other gases, most dangerous to inhale. In his own family he had suffered so much from this cause, that he had been obliged to send members of his family away to Worcester to recover their health. Zymotic disease was common in 1854. Scarlatina occasionally appears in an epidemic form within the borough. Complains of the canal being a great nuisance. Typhus fever has been bad at times. In one instance he attended a family living next his own house. They all had typhus fever. This case was so bad, it was specially reported to the Board of Guardians. There was some over-crowding in this house. Does not consider the Nuisances Removal Act is of any use for Droitwich."

Mr. *Gabb* here asserted that the Nuisances Removal Act had never been carried out in the borough. The corporation had not even appointed an Inspector of Nuisances.

The *Mayor* and the *Town Clerk* both asserted that the Nuisances Removal Act had been carried out, and they submitted that it was a question of law whether an Inspector of Nuisances need be appointed under that statute.

It would appear that some of the nuisances complained of had been removed after complaint had been made to the Mayor; but, at the same time, no evidence was adduced to show that the Nuisances Removal Act had really been fully carried out in the district. I am of opinion, that taking the class of nuisances existing in the borough of Droitwich, it will be found, that the powers conferred by the Nuisances Removal Act are not sufficient for their permanent abatement.

The Town Clerk explained that there are two boroughs, the municipal and the parliamentary borough. The municipal borough comprises four parishes, viz., that of St. Andrew's, St. Peter's, St. Nicholas, and the In-Liberties. With reference to the number of road surveyors, he said that it was in contemplation at the present time to form the roads into one district, and place them under one superintendence.

The roads are lighted with gas. The lamps are under the care of the corporation. They levy a sixpenny rate for the same. The lighting district over which the rate is levied is a district of itself. The gas company was formed under the Joint Stock Act. There are 50 public lamps in all paid for by the corporation. There are six more paid for by the Turnpike Road Trustees; two by the Commissioners of the Coventry Charity, and one by the Guardians of the

Droitwich Union. The price paid for the lamps is 3*l.* per annum each. The charge to private consumers is 8*s.* 4*d.* per thousand feet. Droitwich.

There are no Local Acts of Parliament in force within the district for the improvement of the town, &c.

The natural drain for a considerable portion of the borough is direct into the river Salwarp.

The more southern portion of the borough drains into a brook, which also eventually falls into the Salwarp. The outfall of the Salwarp is into the river Severn, at a distance of about eight miles from Droitwich.

General Description of Droitwich.

Droitwich is a very ancient borough and market town. It is situated in the upper division of the hundred of Halfshire, in the eastern division of the county of Worcester. It is nearly seven miles from the city of Worcester, and 118 miles from London, It was anciently called *Wich* or *Wiche* from the wiches or salt springs, of which there are many in the neighbourhood. The Ancient Britons are said to have had an establishment for making salt here, and a road has been traced from the coast of Lincolnshire across the kingdom to this place. It is supposed to have been formed by the early inhabitants of the island, and called the Upper Salt-way. The Romans made Droitwich one of their stations, and called it *Salinæ*. In 816 a grant was made by Kenulph, King of Mercia, to Hamilton of ten houses in Wick, with salt furnaces to the church of Worcester.

The prefix *Droit*, right or legal, is supposed to have been added to the original word Wich, in consequence of some exclusive privilege granted to the inhabitants for the manufacture of salt. King John granted a charter to the town, which Henry III. confirmed, and by a charter of the 22nd of James I., which refers to prior charters, the body corporate consisted of two bailiffs, a recorder, two justices, a town clerk, burgesses, &c.; but by the Act 5 & 6 William IV. cap. 76, the government is now vested in a mayor, four aldermen, and twelve town councillors. A commission of the peace was granted to the borough by Her present Majesty. There are now nine magistrates; and a court of record is held every Thursday for the recovery of debts under 10*l.* Salt baths have been established here, and from the known good qualities of the brine springs, proved by actual analysis, it is not at all unlikely that they will become much patronised. The distance from the sea, and the beauty of the surrounding country, point out that if the

Droitwich. town were improved, it is likely that Droitwich, on account of these salt baths, would become a place of much resort.

A canal passes through the town, and the Oxford, Worcester, and Wolverhampton Railway Company have a station for the convenience of the inhabitants; besides this, there is a branch on to the Midland Railway, which affords direct communication with Birmingham and the north. Formerly the town returned two members to Parliament, but now it only, in conjunction with other parishes, returns one. The Right Hon. Sir J. S. Pakington, of Westwood Hall, near Droitwich, is the present member.

In 1816 a workhouse or hospital was founded by the Right Hon. H. Coventry. It is now called the Coventry Hospital. This bequest was appropriated to the support of 38 aged persons, and in connexion with it are schools for boys and girls. The original legacy left by Henry Coventry has been much increased by accumulations, and is now said to produce an income of about 1,100*l.* per annum.

The municipal borough comprises the parishes of St. Andrew's, St. Peter's, St. Nicholas, and the In-liberties or "Vines" as it is sometimes called.

Besides the above parishes, the parliamentary borough comprises the several parishes of Dodderhill, Hampton Lovett, Doverdale, Salwarp, Martin Hussingtree, Oddingley, Hadsor, Hindlip, Himbleton, Elenbridge, the Moreway end division of Hanbury, and the extra parochial places called Crutch and Westwood Park.

The Droitwich Poor Law Union comprises 26 parishes. A workhouse has been erected in the borough of Droitwich for the Union. Provision is made for 200 paupers, but at the time of my visit, the total number within the walls was 127.

The general geological features of Droitwich may be thus described. The upper stratum is a species of marl, under which is a bed of gypsum, or as it is locally termed 'shell' 'rock-bend' or 'flag' of considerable thickness, beneath which, and at a level of about 170 feet below the surface, flows a river of brine about 22 inches in depth. The great substratum is a salt rock. A fine grained calcareous argillaceous sand-stone rock, of a reddish colour, prevails in the district.

The salt springs of Cheshire are found in similar strata; but of all the salt springs in the country, those of Droitwich are considered to be the strongest.

The usual course of procedure in sinking the brine pits is to sink wells for some depth, usually about 20 feet, but in

some instances wells have been sunk as deep as 80 feet. Droitwich. The 'shell' or 'rock-bend' is then bored to the requisite depth to reach the brine river, which when pierced rises to a level about 30 feet below the surface. This level never varies. The brine is then pumped into reservoirs, and is thence discharged into large pans or vessels, where by the application of heat, the water is driven off, and by the aid of resin, the salt at the bottom of the pans is granulated. It is then collected, dried in stoves, and made fit for use. Various kinds of salt are made, varying from the coarsest kind for fish purposes, to the very fine for domestic use.

The following is a return of cost, &c., of the highways for the year ending Lady Day, 1856:—

BOROUGH OF DROITWICH, COUNTY OF WORCESTER.

RETURN of the Length of the Highways within the said Borough, the costs of repairing the same, the Rate in the Pound per Annum, and the Amount levied, from Lady Day 1852 to Lady Day 1856, inclusive.

Date.	Length of Highways.	Costs of repairing same.	Rate in the £.	Amount levied.
		£ s. d.		£ s. d.
1852 March 25	Saint Andrew, 3¾ miles	46 14 10½	3*d.*	49 10 11½
1853 „	„ „	43 7 1	—	44 7 9
1854 „	„ „	36 16 10	—	44 5 5
1855 „	„ „	42 10 7	—	46 0 11
1856 „	„ „	42 1 7	—	46 3 8
1852 March 25	Saint Peter, 2½ miles -	52 1 4	3*d.*	64 13 10
1853 „	„ „	32 6 6	—	38 1 6½
1854 „	„ „	35 14 8	—	59 2 3
1855 „	„ „	32 7 11	No rate levied this year.	
1856 „	„ „	63 13 4	3*d.*	57 6 1
1852 March 25	Saint Nicholas, 1¼ miles	11 13 10	3*d.*	23 16 0
1853 „	„ „	26 7 4	—	24 1 5
1854 „	„ „	44 18 0	5*d.*	43 14 0
1855 „	„ „	55 0 7	6*d.*	63 9 8
1856 „	„ „	54 17 11	—	69 13 0
1852 March 25	In-liberties, 1 mile -	33 15 3	5*d.*	34 15 9
1853 „	„ „	26 10 6	—	34 11 3
1854 „	„ „	14 9 4	No rate levied this year.	
1855 „	„ „	21 1 9	5*d.*	33 19 0
1856 „	„ „	37 13 2	—	32 15 11

The following ESTIMATE of the RATEABLE VALUE of the Municipal Borough of DROITWICH was handed in by Mr. TOMBS, the Town-Clerk.

	Main Streets.				Back Streets.	Grantham, Holloway, Witton, Vines, &c.	Land.	Saltworks.
	Rateable Value under £5.	£5 and under £10.	£10 and under £20.	£20 and above.				
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Saint Nicholas, 187 Ratepayers	72 2 2	111 6 0	152 0 10	60 0 0	13 14 0	758 16 1	1,205 6 0	830 2 0
Saint Andrew, 270 Ratepayers	62 18 0	305 10 0	378 10 0	281 4 0	189 7 0	362 9 0	1,639 6 4	491 17 6
Saint Peter, 204 Ratepayers	42 9 7	94 16 3	217 13 7	341 6 9	176 8 9	499 16 1	1,504 16 11	1,731 3 0
The In-liberties	4 0 0	5 6 0	67 0 0	0 0 0	0 0 0	543 6 0	158 8 6	929 10 0
	181 9 9	516 18 3	815 4 5	682 10 9	379 9 9	2,164 7 2	4,507 17 9	3,982 12 6

Total £13,230 10*s.* 4*d.*

The following returns of the rateable value of the municipal borough of Droitwich, are given under the hands of the parish officers: Droitwich.

	£	s.	d.
St. Peter's - - - -	4,598	19	3
(Signed) W. WAGSTAFF, *Overseer.*			
St. Andrew's - - -	3,824	6	4
(Signed) JAMES HUNT.			
St. Nicholas - - - -	3,192	5	8
(Signed J. WARD, *Overseer.*			
In-Liberties - - -	1,687	0	6
(Signed) WILLIAM CHESTER, *Overseer.*			
Total - -	£13,302	11	9

Return of the number of houses in the municipal borough of Droitwich, from the census of 1851 :—

	Houses.
Inhabited - - - - -	582
Uninhabited - - - -	11
Building - - - -	8
Total - - - -	601

Droitwich. Statement of the mortality in the borough of *Wych* or *Droitwich*, in the county of Worcester, for the last seven complete years; distinguishing the number of deaths from zymotic diseases in each year, and the number of deaths in public institutions.

	Deaths registered in the year ending December 31st.							
	1849.	1850.	1851.	1852.	1853.	1854.	1855.	Total in 7 years.
From zymotic diseases	17	15	15	14	13	57	19	150
From other causes	73	69	60	62	71	63	68	466
Total, including public institutions	90	84	75	76	84	120	87	616
Deaths in the Union Workhouse and other public institutions.*	26	22	27	20	17	19	27	158

	Including Public Institutions.	Public Institutions only.
Population in 1841	2,767	220
„ „ 1851	3,125	298
Average annual mortality to 1,000 persons living 1849–55, including the deaths in public institutions.	27·7	
Ditto ditto: exclusive of deaths in public institutions	22·8	

(Signed) George Graham,
Registrar General.

General Register Office, Somerset House.
4th December, 1856.

The deaths from zymotic diseases in the seven years are thus registered.

1849.	
Diarrhœa	3
Dysentery	1
Cholera	8
Influenza	4
Typhus	1
Total	17

* Comprising the Union Workhouse, the Lunatic Asylum, and Coventry Hospital.

Droitwich.

1850.

Scarlatina	1
Hooping cough	6
Diarrhœa	5
Influenza	1
Erysipelas	2
Total	15

1851.

Small pox	1
Scarlatina	2
Croup	1
Thrush	2
Diarrhœa	4
Influenza	1
Typhus	3
Erysipelas	1
Total	15

1852.

Hooping cough	2
Diarrhœa	4
Dysentery	1
Influenza	2
Typhus	4
Erysipelas	1
Total	14

1853.

Scarlatina	1
Hooping cough	2
Diarrhœa	4
Influenza	4
Typhus	2
Total	13

1854.

Small pox	17
Measles	6
Scarlatina	25
Diarrhœa	3
Dysentery	1
Cholera	2
Influenza	2
Typhus	1
Total	57

Droitwich.

1855.

Hooping cough	3
Dysentery	1
Cholera	1
Influenza	7
Typhus	7
Total	19

It will be observed from the foregoing details that deaths from preventible disease are numerous in Droitwich.

In the above details the deaths from zymotic diseases which occurred in the public institutions are not included. Many deaths occurred from cholera in the Union workhouse.

In 1854, it will be observed, preventible disease was particularly fatal; no less than 57 deaths out of a total of 63, occurring from zymotic diseases, besides those which occurred in the public institutions.

These returns furnish abundant proof that Droitwich is most unhealthy, and of the great necessity existing for its sanitary improvement.

It is rather remarkable that the deaths from consumption are not numerous. The occupation of the men and women in the salt-works would induce the supposition that they were peculiarly liable to this distressing malady, working as they do, in many instances, in a state of semi-nudity in the heat and damp of the evaporating and drying houses. The sudden change from these places to the frequent cold and wet of the external air, must be exceedingly trying to the constitution. As it is, the wretched and miserable appearance of many of the salt-work labourers affords sufficient evidence that their occupation is not a very healthy one.

Inspection of Town and District.

The following extract from my notes of particular localities on making an inspection of the town and district, will give some idea of the present state of Droitwich, and how far the municipal authorities have the means of improving their district and of permanently abating the many dangerous nuisances now existing, to the detriment of the public health.

In making my inspection I was accompanied the whole or part of the time by the Mayor, Messrs. Gabb, T. S. Smith, — Smith, architect; W. Noke, J. Holyoake, J. Blick, &c., to all of whom I am much indebted for the courtesy and attention I received at their hands.

Almost without an exception, the footpaths throughout the town of Droitwich are wretchedly made, and badly kept. There is little or no provision for the flow of the surface water by means of proper gutters or channels; the consequence is, in times of heavy rain, the surface-water runs over the causeways, and makes them almost impassable. Droitwich.

The principal roads throughout the town belong to the Turnpike Trust. There appears to be no regular authority for keeping the footways in order at all. From the want of some proper local governing body, for years past, all sorts of encroachments have been made on them, and in almost every street there are instances of nearly the whole width of the footpath being taken up by steps to doors, bay windows to the ground-floor rooms, or by middens or yards, which are both filthy to the sight and offensive to the smell. This is the case at the entrance to the town from the railway station. There is a middenstead here, which, when I saw it on two occasions was in a very disgraceful condition. It was described to me as having been lately in the occupation of one John Nunn.

The want of proper surface drains is much felt at this part of the town. I was told that at times the water rushes down from the high ground (there being no provision to conduct it by some artificial channel to the brook), enough to "turn a mill." As the floors of some of the adjacent houses are below the level of the street, they are completely flooded on these occasions.

The principal traffic through the streets is to and from the salt works, and the constant dropping of the salt from the carts has the tendency of keeping the roads in bad repair. The turnpike portion of the district, however, appears to be moderately well kept, and there is little to find fault with in some of the public highways. But in some instances they are very bad. This remark applies more especially to the 'In-Liberties.' There are highways here literally knee-deep in mud, and as the common custom is to throw all kinds of refuse on to them, which remains there to rot, it may be imagined that they are in a very filthy state.

The town is very irregularly built, and many of the houses are very ancient. There is generally little or no provision for proper ventilation, and very many of the smaller tenements are in a very ricketty and dilapidated condition.

Besides the actual town portion of the borough, there are many houses scattered over the outlying district.

Droitwich. *St. Peter's church and churchyard* is situated outside the town, and there is no house near except a farm house, where there is a very offensive privy, which actually empties itself on to the public road.

At eight houses belonging to a Mrs. *Liley*, the arrangement for drainage is very bad. The ground slopes steeply down at the back, and the whole of the surface water runs into the back yards. The want of a proper drain to conduct it away is much felt, and the yard at times of rain is in a very wretched condition. There is a drain from a privy which passes under the floors of one of the houses into a covered drain in the street. It was made matter of complaint that this drain was stopped.

Mr. G. T. Smith's Cottages.—There is one privy here to three houses.

There is a spring of water in *Tagwell Lane*, known by the name of the "Tagwell Springs," I believe, which promises, if the quantity should prove sufficient, to be admirably adapted for the supply of the town. (See Water Analyses, p. 24–5 of this Report.) Mr. Smith, architect of Droitwich, informed me that these springs were at a height of from 80 to 100 feet above the general level of the town.

The state of the roads and footpaths near the National schools and the Coventry hospital is very bad, and all the cottages in the same neighbourhood are badly supplied with water and wretchedly drained.

The National Schools.—The privies are in a very filthy state, the floors being quite half-an-inch deep in water, with no apparent means of draining them. They are not (at the time of my inspection) fit for the children's use.

There is a well near the schools which receives the surface water from the road. It is the only source of supply for a good many houses.

Houses belonging to the Executors of —— Wild.—There is a privy the liquid from which oozes through the wall into the yard, and at the back houses there is a privy close to one of the doors. The smell is very much complained of. There has been much illness here. The paving to the yard is in a very wretched condition.

Coventry Hospital.—There are 18 houses, which are inhabited by 39 persons. There are two privies for the use of the houses. They are situated at either end of the buildings. Considerable inconvenience and discomfort must be caused to the inhabitants by the want of better accommodation in this respect.

Fowler's Well.—The water from this well is used for the supply of one small street. It is conducted by pipes from the well to the street. Droitwich.

Cottage Property belonging to the Executors of J. Brown.—The back yard in a very filthy state, and only one privy to six cottages. As is the case in almost every other instance, the want of proper surface drainage is much felt.

The canal referred to in evidence by some of the gentlemen who attended the inquiry is in a dirty state, and evidently receives much drainage and refuse that it ought to be free from.

Near the old bridge there is a very filthy accumulation of refuse.

The state of the cottage property at the boundary of the parish adjoining Dodderhill is very bad indeed. The yards are very dirty, and in one instance, not an uncommon one in other parts of the district, the cesspool is emptied and the contents deposited in a hole dug in the ground and covered over with a little earth. The accumulation of every description of nuisance appears to be permitted here, and I must observe that the appearance of the whole of the district called the "In-liberties, or Vines," indicates that either the Nuisances Removal Act has been a dead letter in the borough, or that its provisions are by no means sufficient to meet the exigencies of the case. Throughout the district there are large accumulations of manure and offensive refuse at the sides of the road, all of which are most offensive to sight and smell. The yards to some houses built near the railway retaining wall, are in a filthy condition. Large heaps of every description of obscene refuse are piled up close to doors and windows. Such wells as there are, are polluted by surface and privy drainage, and the wretched inhabitants of these dreary hovels complain loudly of the horrible state they are in. The water is undrinkable, and I was informed by some of the cottage occupiers that they have to give a half-penny for two buckets full of somewhat better water, and it frequently costs them threepence a week for this alone. A number of houses are without any accommodation for decency or comfort, and in those instances where some kind of provision is made, it is usually in an inconvenient and indecent position. It is absolutely impossible to exaggerate the squalor and filth of these places. The surface is worn into deep holes, filled with stagnant water. Excremental matter, and foul odds and ends of both vegetable and animal matter are scattered about on the roads

Droitwich. and yards to rot. The yards are unpaved, the pigsties dirty in the extreme, and the cesspools, where there are any, are all in a wretched condition.

There are also large accumulations from the salt-works, which are called "Ash-banks." They consist of the refuse from the fires, &c., and are sometimes in a state of ignition. A very offensive sulphurous kind of vapour is then thrown off, which is described as being most painful to inhale. It will be observed on reference to the evidence given by Mr. Jaques, at the inquiry, that he attributes the occurrence of disease to this cause.

One portion of the "In-liberties," denominated "Mount Pleasant," much belies its name. The yards and houses are generally in the same state as those I have already described. The inhabitants bear evident traces of the demoralising influences by which they are surrounded, and the misery and squalor depicted on the faces of many of them, from the staggering infant to the grown-up man and woman, are sad to behold.

Harris's Cottages.—These are again in a very bad state. There are no back doors or provision for ventilation. The yards strewed with excremental matter.

Farden's Houses.—There are no privies here at all. The roads in front are knee deep in mud, and a little beyond, on a piece of land belonging to Mr. Blick, there is a very large accumulation of filthy refuse.

There is a well near here, the water from which is used by the neighbouring inhabitants; it is by the road side, but there is no provision to prevent the surface water from running into it.

At a collection of houses called "Grantham," very much the same state of things prevails.

The Union Workhouse is in a very fair state. The wards and yards are clean and well kept, and the contrast between the children here, and those squalid infants grovelling among the dung heaps in the In-liberties is very striking.

The privies at the workhouse are susceptible of improvement. They are by no means free from a very unpleasant smell.

The habits of the lower order of the population in Droitwich lead to very early sexual intercourse, the consequence of which is the workhouse is saddled with a large population of bastard children.

Houses at Winnet's-lane.—There are no back windows here, but there are back doors opening into a yard which is covered with an accumulation of filthy manure and refuse of all kinds waiting to be carted away. The place is very offensive. Droitwich.

The state of the footpaths along the whole of this portion of the town is very much the same as those already described, and at one place, called the "Dutch-wall," they are knee deep in mud.

Dripping-lane.—Reeking pigsties—a total want of surface paving—insufficient privy accommodation—and a large mass of filth, are the characteristics of this place. There is also a slaughter-house close by. At some cottages near this belonging to a *Miss Smith*, there is one privy to ten tenements. This is placed at a considerable distance from the houses; the cesspool is stinking and overflowing. There is one pump to the supply of all the houses.

Star-yard.—As filthy as the rest.

Gurney's-lane.—Nothing can present a more wretched picture than this place. The road is cut up into ruts 9 inches deep, and these are filled with water. There is an accumulation of manure and filth of all kinds, and there is no provision whatever for water supply for the inhabitants of the wretched cottages. There are seven houses with two privies, which are also common to a public house. Words can convey no adequate idea of the state of these filthy holes.

In walking over the district the great want of an improved water supply is very striking, and in order to ascertain what quality of water was to be obtained in the neighbourhood for this purpose, I caused three samples to be furnished me for the purposes of analysis. In accordance with my request, Mr. Gabb sent me samples as under.

Tagwell springs marked "T."
Holloway-road well „ "H."
Body Brook „ "B."

As I have already remarked, I was informed by Mr. Smith, that the height of the Tagwell springs above the town is from 80 to 100 feet. The well at Holloway-road does not afford a sufficient quantity of water for the supply of the town; at Body brook, although there is an almost unlimited quantity of water, the level is such (as is also the case with the Holloway-road well) as would necessitate pumping to command the town.

Droitwich. The following report from Mr. Blyth, analytical chemist to the General Board of Health, will afford information as to the relative qualities of these waters, and their fitness as a supply for the use of the inhabitants of Droitwich.

General Board of Health,
February 9, 1857.

To Alfred Dickens, Esq.

Dear Sir,

I have made an examination of the three samples of water from Droitwich, marked respectively B, H, T, a report on which I beg to inclose with this. The sample marked T is evidently the best, being a remarkably fine water. If a plentiful supply of it can be obtained, there can be little doubt which of the three should be selected for supplying the town. I think it would be well to make a complete analysis of it for further satisfaction, in that case I should require a larger quantity, not less than two gallons.

I am, dear sir,
Faithfully yours,
Lindsey Blyth.

Chemical Examination of Three Samples of Water from Droitwich—marked B, H, T.

B. Taste flat and saline—contains much suspended impurity, which subsides on standing—the water above remaining perfectly clear.

Clark's soap test showed 42·9 degrees of hardness, which were scarcely diminished by boiling; 7,000 grains evaporated to dryness gave 10·11 grains of solid residue, showing a gallon of the water to contain 101·1 grains of matter in solution.

Another portion evaporated with carbonate of soda to dryness and ignited, gave as loss for organic matter, 6 grains in the gallon, leaving 95·1 grains of saline matter.

The organic matter did not give off any offensive odour during its combustion, but appeared to consist chiefly of vegetable matter.

The saline matter consists chiefly of sulphate of lime and chloride of sodium.

The only objection to this water is the large quantity of lime salts it contains, which from their nature give a permanent hardness to the water; they would also tend to disturb the digestive functions in delicate persons.

H. Taste flat and saline, contains some suspended impurity, which subsides entirely on standing; degree of hardness 25°·5, not much diminished by boiling.

Total matter dissolved in a gallon -	-	94·4 grains.
Of which, organic matter -	-	2·6 „
Saline matter -	-	91·8 „

The organic, and the saline matters, are of the same character as in sample B.

T. Taste pleasant, bright, and free from suspended impurity, well aërated. Droitwich.

Degree of hardness - - -	12·7
Diminished by boiling to - - -	1·5
Total matter dissolved in a gallon - -	31·3 grains.
Of which, organic matter - - -	0·7 „
Saline matter - -	30·6 „

This water is excellent in every respect, well aërated, free from mechanical impurity and organic contamination. The hardness is almost entirely removed by boiling, so that it is wholesome to drink, and economical for domestic use.

LINDSEY BLYTH.

Laboratory, General Board of Health,
February 9, 1857.

GENERAL REMARKS.

There can be no doubt that great need for sanitary improvement exists in the borough of Droitwich. The mortality is large, and the present state of the whole of the poorer class of property in the district is such as to justify the conclusion, that the average mortality is likely to be considerably increased rather than reduced. There is nothing in the position of the town to render the execution of drainage works unusually costly; on the contrary, as far as I can judge from the information I gathered in my inquiry and from my own personal observation on my inspection of the district, I am inclined to think that works may be economically constructed. In nearly all the worst blocks of houses there is ample room for the construction of drains and sewers without much interference with private property or dwellings, and the powers granted to Local Boards under the Public Health Act 1848, would certainly go far towards entirely removing the nuisances now existing.

There is, according to the information of Mr. Smith who has tested his opinion by taking the levels of the district, a very fair outfall to be obtained for the town drainage by taking it to a point below Briar Mill. In making this calculation, Mr. Smith informed me he had allowed for the use of the iron pipe laid in under the canal by the firm, of which the Mayor of Droitwich is a member, and which pipe was referred to in the evidence given by that gentleman.

The outfall pipe already laid under the canal, and which is 18 inches in diameter, would in all probability be suffi-

Droitwich. cient to take the whole drainage of the town; but this can only be ascertained after the preparation of proper surveys and plans, and after the various sewers and subsidiary drains have been laid down on such plans, and their sizes and inclinations carefully considered.

It is not necessary that I should enter into the subject of the deodorisation of the accumulated sewage here, but there appears to be a reasonable prospect that the manufactured sewage manure would be a marketable commodity in the district. It will be for the Local Board to consider, should one be formed, what process of deodorization they should adopt, in the event of it being found undesirable or inconvenient to have the outfall of their sewers direct into the Salwarp at the point indicated by Mr. Smith.

By arrangement, means for occasionally flushing a considerable length of sewers could be devised without relying wholly on any improved supply of water that may be obtained for the general use of the district. But supposing such a supply is furnished to every house, or even to blocks of the smaller cottages no expensive provision need be made for any special means of flushing.

It will be gathered from the foregoing part of this report, that the present water supply is very insufficient in quantity, and in most cases equally bad in quality. Numbers of houses are entirely dependent on a purchased supply, or on the bounty of their more fortunate neighbours. In the "In-liberties" it was stated to me more than once, that it cost the cottage occupiers there threepence a week for a limited supply of indifferent water. There is no reason for believing that a Local Board of Health in Droitwich could not furnish a constant supply of good water at a considerably less cost than this.

It will be observed on reference to Mr. Blyth's report that the water from the Tagwell spring is of a very good character. The situation is good in reference to a gravitating supply for the town, but there appears to be some doubt as to the quantity available in dry summer weather. On the occasion of my inspecting it there was a very copious supply of water, and the roads and fields for some distance around bore evidence of the very large quantity then running to waste. Although the comparative purity of the Tagwell water points it out as one of the best supplies for Droitwich, it would be injudicious to act without collecting further data as to quantity, &c. It

is desirable that something like 80,000 gallons should be collected for the supply of Droitwich for the 24 hours. It is only by careful gaugings and experiments that it can be ascertained if this quantity can be economically stored from the yielding of Tagwell spring. Droitwich.

Body-brook, I am informed, yields a very large supply, but it will be observed from Mr. Blyth's analysis that this water is not a proper one for the supply of a town.

The Holloway-road well water is somewhat of a similar character, as regards organic and saline matter, to that from Body-brook, but it is not so hard.

The following extracts from Mr. Blyth's analysis will show at a glance the relative merits of these waters.

	Degree of Hardness.	Diminished by boiling to	Total Matter dissolved in a Gallon.	Organic.	Saline.
Tagwell - -	12·7	1·5	31·3grains	0·7	30·6
Body-brook -	42·9	42·9 about	101·1 „	6·0	95·1
Holloway-road	25·5	25·5 „	94·4 „	2·6	91·8

With reference to the boundaries to be adopted in the event of the application of the Public Health Act to Droitwich, it was suggested that the whole area of the municipal borough should form the limits of the district. On very careful consideration, and after an examination of the district generally I am inclined to adopt this suggestion.

By so doing, the Act can be applied to the district by Order in Council forthwith, whereas if a new boundary is made, a further inquiry will be necessitated. If, after a time, an alteration of the boundary should be deemed desirable, the Local Board could memorialize the General Board of Health to that effect, and a provisional order, fixing a new boundary, under the 141st section of the Public Health Act, could be granted accordingly.

It must be borne in mind that the ratepayers of the whole municipal borough are qualified to vote for the municipal council, and it would, therefore, probably produce much annoyance and opposition (as the mayor, aldermen, and councillors would form the Local Board) if those outlying ratepayers were to be allowed to participate in the election of a Local Board with powers of taxation to which they themselves were not subject. Should the outlying district pay less amount of rate than at present for the repairs of the highways under the 88th section of the

Droitwich. Public Health Act, it would still, have to bear its proportion of the establishment charges which in all probability would tend to equalise the rating.

There can be no doubt that if all the roads within the municipal borough are placed under the management of a competent surveyor elected by the Local Board, they will be kept in repair for a smaller sum than they are at present. Competent management and professional skill can certainly keep highways in better order, and at less cost, than uninstructed individuals.

Summary of Conclusions and Recommendations.

After careful consideration of all the circumstances of the case, I have the honour of laying before you the following Summary of Conclusions and Recommendations :—

1. That the rate of mortality within the borough of Wich, or Droitwich, in the county of Worcester, is very high.

2. That excess of disease may be distinctly traced to the undrained condition of many of the houses, to deficient ventilation, and the want of a proper water supply.

3. That the highways are badly kept at a large annual cost.

4. That the condition of the inhabitants would be materially improved, their happiness and comfort increased, and their rates eventually reduced,

i. By a thorough system of public and private drainage.

ii. By a supply of wholesome water laid on, as far as possible, to every house, and by the abandonment of all those wells now in existence, the water from which is admitted by all to be impure and unwholesome.

iii. By the substitution of more decent accommodation, in lieu of the present filthy privies.

iv. By improved surface paving to all the courts, alleys, and yards, and by the improvement of the highways throughout the town, more especially in the "In-liberties."

5. That the improvements above enumerated, if carried out judiciously, can be effected in an economical manner.

6. That the outlay need not be burthensome or oppressive to any class of the ratepayers, as the capital may be borrowed on mortgage of the various rates, and the interest and principal reduced to a small weekly or annual payment. Droitwich.

7. That the application of the Public Health Act to Droitwich is not only necessary at the present time, but it is calculated to be of inestimable service hereafter.

Whereupon, I have the honour of recommending that the Public Health Act, 1848, be forthwith applied, by Order in Council, to the said borough of Wych, or Droitwich, in the county of Worcester.

I have the honour to be, Sir,
Your obedient servant,
ALFRED L. DICKENS,
Superintending Inspector.

The Right Hon. W. Monsell, M.P.,
&c. &c. &c.
President, General Board of Health.

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